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PATENT
81784.0245

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Yutaka IMAMURA et al.

Serial No: 10/040,177

Confirmation No. 9054

Filed: November 6, 2001

For: LASER OUTPUT CIRCUIT FOR
OPTICAL DISK RECORDING
APPARATUS

Art Unit: 2652

Examiner: Peter Vincent Agustin

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APPEAL BRIEF

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Dear Sir:

This is an Appeal from the Examiner's Final Rejection of claims 1 and 3-8. The Final Rejection issued on June 30, 2005 and the Notice of Appeal was sent to the Patent and Trademark Office on September 14, 2005.

(i) REAL PARTY IN INTEREST

The real party in interest is Sanyo Electric Co., Ltd., Osaka, Japan.

(ii) RELATED APPEALS AND INTERFERENCES

None

(iii) STATUS OF CLAIMS

Claims 1 and 3-8 are pending. This Appeal is directed to the final rejection of claims 1 and 3-8.

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(iv) STATUS OF AMENDMENTS

A Response To Final Office Action was filed on August 10, 2005 in response to the Final Office Action of June 30, 2005. The Response To Final Office Action makes no amendments but contains arguments with respect to the Final Office Action. An Advisory Action issued on August 23, 2005. The Advisory Action states that Applicants' arguments filed in the Response to Final Office Action on September 22, 2004 have been considered but are not persuasive.

(v) SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1

Claim 1 defines a laser output circuit for an optical disk recording apparatus (Fig. 1) in which an optical disk 3 is rotated at a constant angular speed (lines 8-10 of page 9) and a signal is recorded while the disk is rotated (lines 12-16 of page 10). A pickup control circuit 6 controls the position of a pickup 4 at which data is written onto the optical disk (lines 3-7 of page 6). A signal recording circuit 14 supplies to the pickup data to be written onto the optical disk (lines 14-18 of page 7). A signal level detection circuit 15 detects a signal level of the signal read by the pickup (lines 18-22 of page 7). A laser output setting circuit 13 sets a laser output for the writing of data onto the optical disk by the pickup (lines 11-14 of page 7). Test data is written onto a trial writing region A on an inner peripheral side of the optical disk and onto an outer peripheral region F outside a data writing region (lines 26 and 27 of page 7 and lines 1-6 of page 8). The written test data is read from the disk, and the laser output is set in accordance with the signal levels of the test data read from both the trial writing region and the outer peripheral region (lines 8-12 of page 8). The trial writing region A, a buffer region B, a lead-in region C, a program region D, and a lead-out region E are disposed in order from the inner peripheral side of the optical disk toward the outer peripheral side (Fig. 2). The outer peripheral region F is disposed outside the lead-out region E. Test data is written onto or read from the trial writing region A disposed on the innermost peripheral side of the optical disk

and the trial writing region disposed outside of the lead-out region (lines 4-15 of page 12).

Claims 3-8

Claims 3-8 depend from and contain all of the limitations of claim 1.

(vi) GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are as follows:

1. Claim 1 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,052,347 of Miyata in view of U.S. Patent 6,404,712 of Lee et al.
2. Claims 3-5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyata and Lee and further in view of U.S. Patent 6,134,209 of Den Boef.
3. Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyata and Lee and further in view of U.S. Patent 5,321,679 of Horiguchi.
4. Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyata, Lee and Horiguchi and further in view of JP 58164059A of Inaba.
5. Claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyata, Lee and Horiguchi, and further in view of U.S. Patent 4,788,672 of Toyooka et al.

(vii) ARGUMENT

In rejecting claim 1 as unpatentable over Miyata in view of Lee et al., the statement is made beginning at the bottom of page 3 of the Final Office Action that "The combination of Miyata and Lee will inherently result in a disk having multiple trial writing regions and a lead-out region. However, this combination would be

silent in regard to the arrangement of these regions, i.e., Miyata in view of Lee do not explicitly disclose the claimed 'the trial writing regions disposed outside of the lead-out region' (the term outside being interpreted as a direction proceeding toward an outer circumference). Note that the trial writing region would either be disposed inside or outside the lead-out region. However, it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to have arranged the trial writing region of Miyata in view of Lee outside the lead-out region as claimed because either arrangement would have been obvious variants and the applicant's invention would have been expected to perform equally well with either arrangement of the trial writing region and the lead-out region, see MPEP 2144.03 [R-1] section VI - C. Rearrangement of Parts."

In rejecting claims 3-5 as unpatentable over Miyata and Lee in view of Den Boef, the statement is made beginning at the top of page 5 of the Final Office Action "Den Boef discloses setting a laser output based on information on a recording property of a disk (column 2, lines 35-48), wherein said recording property is determined from test data based on a relationship between the laser output and the signal level of a signal read by a pickup (column 1, lines 56-59), and wherein prerecorded data regarding a recording property of the disk is read from the disk, and said recording property is determined based on the read data (column 1, lines 56-59). It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have set the laser output of Miyata & Lee based on the recording property of a disk as suggested by Den Boef, the motivation being to provide a reliable method for setting the optimum write power depending on read signals from test patterns written on a medium and being less affected by noise (see column 1, lines 56-59)".

In rejecting claim 6 as unpatentable over Miyata and Lee and further in view of Horiguchi, the statement in the last paragraph of page 5 of the Final Office Action "Horiguchi discloses storing a laser output power in a memory (see abstract lines 8-11). It would have been obvious to one of ordinary skill in the art at the time

of invention by the applicant to have stored the inner and outer peripheral side laser outputs of Miyata & Lee to the memory of Horiguchi, the motivation being to obtain optimum operational conditions even when the optical pickup unit is exchanged (see abstract lines 4-6).

In rejecting claim 7 as unpatentable over Miyata, Lee and Horiguchi and further in view of Inaba, the statement is made in the middle of page 6 of the Final Office Action "Inaba discloses (see abstract) clearing the content of a memory when a disk is replaced (whenever a door is opened) in order to free unnecessary data from memory and to obtain sufficient memory space. It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have deleted the inner and outer peripheral side laser outputs of Miyata, Lee & Horiguchi from the memory when the disk is replaced, as suggested by Inaba. The motivation would have been to free unnecessary data from memory and to obtain sufficient memory space."

In rejecting claim 8 as unpatentable over Miyata, Lee and Horiguchi and further in view of Toyooka et al., the statement is made in the first paragraph at the top of page 7 of the Final Office Action "Toyooka discloses (see abstract) erasing unnecessary data during a period of time when the optical disc memory is not accessed, in order to free unnecessary data from memory and to obtain sufficient memory space. It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have deleted the inner and outer peripheral side laser outputs of Miyata, Lee & Horiguchi from the memory when a predetermined time elapses, as suggested by Toyooka. The motivation would have been to free unnecessary data from memory and obtain sufficient memory space".

In Applicants' Response to Final Office Action of August 10, 2005, Applicants pointed out that the "rearrangement" rationale indicated by the Examiner would not have been obvious to one skilled in the art because normal optical disk recording apparatuses do not use any regions outside of the lead-out region because writing and reading is only performed in regions inside the lead-out region in accordance

with optical disk standards. However, on page 2 of the Advisory Action of August 23, 2005, it is stated that the Examiner recognized that Miyata does not explicitly disclose the presence of a lead-out region. Therefore, in order to overcome this deficiency "the Lee et al. (U.S. 6,404,712) reference, which teaches a lead-out region, was relied upon, and as noted in the previous Office Action, the combination of Miyata and Lee et al. would have inherently resulted in a disk having multiple trial writing regions and a lead-out region. For example, Figure 6, element 13 of Miyata could have been replaced by the structure taught by Lee et al., which would result with the trial region 15 of Miyata being disposed outside the lead-out region, as claimed."

Applicants also argued in their Response to Final Office Action of August 10, 2005 that the present invention clearly distinguishes patentably over the cited references and the attempted combination thereof because the Lee et al. reference does not disclose or suggest that the region outside of the lead-out region can be used, nor does Lee describe or suggest any such use. In responding to this on page 2 of the Advisory Action of August 23, 2005, the statement is made "First, the Examiner notes that this is not commensurate with the claimed language. Second, the Examiner notes that the rejection is based on a combination of references; therefore, each reference cannot be attacked individually. For example, the Examiner recognized that the Miyata reference does not explicitly disclose the presence of a lead-out region. In order to overcome this deficiency, the Lee et al. reference was relied upon. Therefore, the above-mentioned argument is irrelevant."

In response to such arguments, Applicants note that Miyata discloses a technique of dividing a disk into a plurality of zones in which a plurality of data recording areas 13 and 17, and a plurality of test writing areas 11, 15 and 19, are provided. The test writing area 15 is formed between the data recording areas 13 and 17. Therefore, it is clear that the test writing area 15 is located between a lead-in area and a lead-out area, which are normal writing areas. Because the other test writing areas 11 and 19 are considered to be provided in an area of

similar conditions unless otherwise specifically described, it appears that these test writing areas are also present between a lead-in area and a lead-out area that are normal writing areas. As explained above, Miyata only discloses a structure wherein the test writing area and the data recording area are alternatively provided between the lead-in area and the lead-out area.

On the other hand, Lee et al. only discloses a structure wherein a disk physically has a remaining area on the outer side of the lead-out area, but clearly does not suggest the idea of utilizing this remaining area.

Thus, the feature of providing a test writing area on the outer side of the lead-out area is neither disclosed nor suggested by the attempted combination of Miyata and Lee et al.

Again, Applicants point out that normal optical disk recording apparatuses do not use any regions outside of the lead-out region because writing and reading is only performed in regions inside the lead-out region in accordance with optical disk standards. In accordance with the present invention, because the laser output can be set for using a trial region outside of the lead-out region, an area outside of the lead-out region can be used as a trial region. This would not have been obvious to one skilled in the art.

With respect to the Lee et al. reference, the Examiner has stated that it should be noted that the claimed "outer peripheral region" corresponds to any region on an outer diameter of the disk of Lee et al., e.g., an unlabeled area to the right of the "lead-out area" of Figure 4. According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time the present invention was made to have added the trial, buffer, lead-in, program, and lead-out regions, and the outer peripheral region disposed outside of the lead-out region of Lee to the disk of Miyata, the motivation being to provide a more accurate test-writing, thereby detecting optimal writing power.

However, as Applicants have previously pointed out, Lee only shows that there is a region outside of the lead-out region on an optical disc. Such reference does not disclose or suggest that the region outside of the lead-out region can be used, nor does Lee describe or suggest any such use. Consequently, the present invention is again submitted to clearly distinguish patentably over the cited references and the attempted combination thereof.

Claim 1 defines a laser output circuit in which "test data is written onto or read from the trial writing region disposed on the innermost peripheral side of said optical disk and the trial writing region disposed outside of the lead-out region". Consequently, claim 1 is submitted to clearly distinguish patentably over the cited references.

Similar comments apply to claims 3-8 which depend, directly or indirectly, from and which contain all of the limitations of claim 1.

(viii) CLAIM APPENDIX

1. A laser output circuit for an optical disk recording apparatus in which an optical disk is rotated at a constant angular speed and a signal is recorded while the disk is rotated, said laser output circuit comprising:

a pickup control circuit for controlling a pickup position at which data is written onto the optical disk;

a signal recording circuit for supplying to said pickup data to be written onto said optical disk;

a signal level detection circuit for detecting a signal level of the signal read by said pickup; and

a laser output setting circuit for setting a laser output for the writing of data onto the optical disk by said pickup,

wherein test data is written onto a trial writing region on an inner peripheral side of said optical disk and onto an outer peripheral region outside a data writing region, the thus written test data is read from the disk, and said laser output is set

in accordance with the signal levels of the test data read from both the trial writing region and the outer peripheral region;

wherein said trial writing region, a buffer region, a lead-in region, a program region, and a lead-out region are disposed in order from the inner peripheral side of said optical disk toward the outer peripheral side, and said outer peripheral region is disposed outside the lead-out region; and

wherein test data is written onto or read from the trial writing region disposed on the innermost peripheral side of said optical disk and the trial writing region disposed outside of the lead-out region.

3. The circuit according to claim 1 wherein said laser output setting circuit sets the laser output based on an inner peripheral side laser output set according to the test data read from the trial writing region, an outer peripheral side laser output set according to the test data read from the outer peripheral region, and information on a recording property of the disk.

4. The circuit according to claim 3 wherein said test data is written by altering the laser output within a predetermined range, and said recording property is determined from the test data based on a relationship between the laser output and the signal level of the signal read by said pickup.

5. The circuit according to claim 3 wherein prerecorded data regarding a recording property of the disk is read from the disk, and said recording property is determined based on the read data.

6. The circuit according to claim 1 wherein an inner peripheral side laser output set from the test data read from the trial writing region, and an outer peripheral side laser output set from the test data read from the outer peripheral region are stored in a memory.

7. The circuit according to claim 6 wherein the inner peripheral side laser output set according to the test data read from the trial writing region and the outer

peripheral side laser output set according to the test data read from the outer peripheral region are deleted from the memory when the disk is replaced.

8. The circuit according to claim 6 wherein the inner peripheral side laser output set according to the test data read from the trial writing region and the outer peripheral side laser output set according to the test data read from the outer peripheral region are deleted from the memory when a predetermined time elapses after the end of a recording operation.

(ix) EVIDENCE APPENDIX

None.

(x) RELATED PROCEEDINGS APPENDIX

None.

It is therefore respectfully requested that the final rejection of Claims 1 and 3-8 be reversed and that such claims be determined to be allowable.

This Appeal Brief is submitted herewith in triplicate, and the requisite brief fee is enclosed herewith.

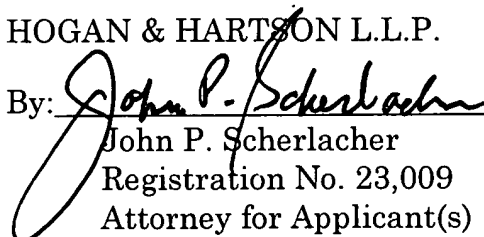
If there are any fees due in connection with the filing of this Appeal Brief, please charge the fees to our Deposit Account No. 50-1314

Respectfully submitted,

HOGAN & HARTSON L.L.P.

Date: November 9, 2005

By:


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